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=> s sirna or short rna molecule

L1 6027 SIRNA OR SHORT RNA MOLECULE

=> s l1 and silenc?

L2 2217 L1 AND SILENC?

=> s l2 and (transform? or transgenic)

L3 302 L2 AND (TRANSFORM? OR TRANSGENIC)

=> s l3 and plant?

L4 85 L3 AND PLANT?

=> dup rem l4

PROCESSING COMPLETED FOR L4

L5 65 DUP REM L4 (20 DUPLICATES REMOVED)

=> d 1-10 ti

L5 ANSWER 1 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Designing of the optimized structures of double-stranded RNAs for effective cellular post-transcriptional interference

L5 ANSWER 2 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI RNA silencing in plants by the transcription of siRNA from RNA polymerase III promoters

L5 ANSWER 3 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Inhibition of insect gene expression in plants by using dsRNA or siRNA and uses for producing insect resistant plants

L5 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Expression of siRNA in tobacco for plants resistant to cytoplasm-feeding parasites

L5 ANSWER 5 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

TI Small interfering RNAs that trigger posttranscriptional gene silencing are not required for the histone H3 Lys9 methylation necessary for transgenic tandem repeat stabilization in Neurospora crassa.

L5 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Large-scale chromatin decondensation induced in a developmentally activated transgene locus

L5 ANSWER 7 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Accumulation of the long class of siRNA is associated with resistance to Plum pox virus in a transgenic woody perennial plum tree

L5 ANSWER 8 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 1

TI Quantitative analysis of siRNA-mediated GFP silencing in transgenic pine cells.

L5 ANSWER 9 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Different effects on ACC oxidase gene silencing triggered by RNA interference in transgenic tomato

L5 ANSWER 10 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Agro-infiltration: a versatile tool for RNAi studies in plants

=> d 2 so

L5 ANSWER 2 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO PCT Int. Appl., 112 pp.
CODEN: PIXXD2

=> d 2 pi

L5	ANSWER 2 OF 65	CAPLUS	COPYRIGHT 2005	ACS on STN		
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2005054439	A2	20050616	WO 2004-US39942	20041201	
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
	US 2005166289	A1	20050728	US 2004-863	20041201	

=> d 3 ab

L5 ANSWER 3 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB The current invention provides methods to **silence** insect genes by using unpackaged dsRNA or **siRNA**, in one embodiment such dsRNA or **siRNA** is present in **plant** vascular tissue, preferably phloem, more particularly phloem sap, and the insect is a **plant** sap-sucking insect. Also provided are DNA sequences which when transcribed yield a double-stranded RNA mol. capable of reducing the expression of an essential gene of a **plant** sap-sucking insect, methods of using such DNA sequences and **plants** or **plant** cells **transformed** with such DNA sequences. Also provided is the use of cationic oligopeptides that facilitate the entry of dsRNA or **siRNA** mols. in insect cells, such as **plant** sap-sucking insect cells.

=> d 3 pi

L5	ANSWER 3 OF 65	CAPLUS	COPYRIGHT 2005	ACS on STN		
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2005049841	A1	20050602	WO 2004-EP13049	20041117	
	WO 2005049841	B1	20050909			
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,					

SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG

=> d 4 ab

L5 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB The present invention relates to **transgenic plants** resistant to parasites that their normal life cycle includes feeding on the plant cytoplasm, including insects, nematodes and fungi, wherein the plants are engineered to produce small interfering RNAs (siRNAs) capable of **silencing** a parasite specific gene. The siRNAs targeted to Bemisia tabaci gene for voltage-gated sodium channel, eIF5A gene, Meloidogyne javanica col-5 gene. Particularly the parasite gene is a stage-specific gene, more particularly a gene involved in essential, early developmental stages of the parasite in or on the plant.

=> d 4 pi

L5 ANSWER 4 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005019408	A2	20050303	WO 2004-IL766	20040822
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

=> d 6 ab

L5 ANSWER 6 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB The high mol. weight (HMW) glutenin-encoding genes in wheat are developmentally activated in the endosperm at about 8 days after anthesis. The authors have investigated the phys. changes that occur in these genes in two **transgenic** lines containing about 20 and 50 copies each of the HMW glutenin genes together with their promoters. Using fluorescence in-situ hybridization (FISH) and confocal imaging, the authors demonstrate that, in non-expressing tissue, each transgene locus consists of one or two highly condensed sites, which decondense into many foci upon activation of transcription in endosperm nuclei. Initiation of transcription can precede decondensation but not vice versa. In one of the lines, cytoplasmic transcript levels are high after onset of transcription but disappear by 14 days after anthesis, whereas small interfering RNAs, which indicate post-transcriptional gene **silencing** (PTGS), are detected at this stage. However, the transcript levels remain high at the transcription sites, most of the transgene copies are transcriptionally active and transcriptional activity in the nucleus ceases only with cell death at the end of endosperm development.

=> d 5 ab

L5 ANSWER 5 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

AB In *Neurospora crassa*, the introduction of a transgene can lead to small interfering RNA (siRNA)-mediated posttranscriptional gene silencing (PTGS) of homologous genes. siRNAs can also guide locus-specific methylation of Lys9 of histone H3 (Lys9H3) in *Schizosaccharomyces pombe*. Here we tested the hypothesis that transgenically derived siRNAs may contemporaneously both activate the PTGS mechanism and induce chromatin modifications at the transgene and the homologous endogenous gene. We carried out chromatin immunoprecipitation using a previously characterized albino-1 (al-1) silenced strain but detected no alterations in the pattern of histone modifications at the endogenous al-1 locus, suggesting that siRNAs produced from the transgenic locus do not trigger modifications in trans of those histones tested. Instead, we found that the transgenic locus was hypermethylated at Lys9H3 in our silenced strain and remained hypermethylated in the quelling defective mutants (qde), further demonstrating that the PTGS machinery is dispensable for Lys9H3 methylation. However, we found that a mutant in the histone Lys9H3 methyltransferase dim-5 was unable to maintain PTGS, with transgenic copies being rapidly lost, resulting in reversion of the silenced phenotype. These results indicate that the defect in PTGS of the Delta dim-5 strain is due to the inability to maintain the transgene in tandem, suggesting a role for DIM-5 in stabilizing such repeated sequences. We conclude that in *Neurospora*, siRNAs produced from the transgenic locus are used in the RNA-induced silencing complex-mediated PTGS pathway and do not communicate with an RNAi-induced initiation of transcriptional gene silencing complex to effect chromatin-based silencing.

=> d 5 so

L5 ANSWER 5 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
S0 Molecular and Cellular Biology, (MAY 2005) Vol. 25, No. 9, pp. 3793-3801.
CODEN: MCEBD4. ISSN: 0270-7306.

=> d 8 ab

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(2005) on STN DUPLICATE 1
S0 Plant science, 2005 Mar. Vol. 168, issue 3 p. 741-746
ISSN: 0168-9452

=> d 9 ab

L5 ANSWER 9 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB RNA interference (RNAi) is a potent trigger for specific gene
silencing of expression in a number of organisms and is an efficient
way of shutting down gene expression. 1-Aminocyclopropane-1-carboxylate
(ACC) oxidase catalyzes the oxidation of ACC to ethylene, a plant
growth regulator that plays an important role in the tomato ripening
process. In this research, to produce double-stranded (ds)RNA of tomato
ACC oxidase, we linked the sense and antisense configurations of DNA

fragments with 1,002-bp or 7-nt artificially synthesized fragments, resp., and then placed these under the control of a modified cauliflower mosaic virus 35S promoter. The dsRNA expression unit was successfully introduced into tomato cultivar Hezuo 906 by *Agrobacterium tumefaciens*-mediated transformation. Mol. anal. of 183 transgenic plants revealed that the dsRNA unit was integrated into the tomato genome. With respect to the construct with the 1,002-bp linker, the severity of phenotypes indicated that 72.3 of the transformed plants had non-RNA interference, about 18.1 had semi-RNA interference, and only 9.6 had full-RNA interference. However when the construct with the 7-nt linker was used for transformation, the results were 13.0, 18.0, and 69.0, resp., indicating that the short linker was more efficient in RNAi of transgenic tomato plants. When we applied this fast way of shutting down the ACC oxidase gene, transgenic tomato plants were produced that had fruit which released traces of ethylene and had a prolonged shelf life of more than 120 days. The RNA and protein analyses indicated that there was non-RNA interference, semi-RNA interference and full-RNA interference of ACC oxidase in the transgenic tomato plants.

=> d 9 so

L5 ANSWER 9 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 SO Plant Cell Reports (2005), 23(9), 639-646
 CODEN: PCRPD8; ISSN: 0721-7714

=> d 10 ab

L5 ANSWER 10 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 AB Agro-infiltration is an *Agrobacterium*-mediated transient gene expression system that is widely used to express foreign proteins in plants. Importantly, agro-infiltration has also become a key method to study plant RNA interference (RNAi). Although agro-infiltration has been successfully used to study many aspects of plant RNAi, it is particularly powerful in identifying proteins having RNAi inhibitor activity (RNAi suppressors). Protocols that deal with testing RNAi repressor activity of a candidate silencing suppressor gene in plants are presented. The protocols are illustrated using *Nicotiana benthamiana* GFP transgenic plants and *Agrobacterium* cultures carrying a GFP expression cassette or a candidate silencing suppressor. Protocols for measuring GFP mRNA and siRNA levels are also provided.

=> d 10 so

L5 ANSWER 10 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 SO Gene Silencing by RNA Interference (2005), 357-364. Editor(s): Sohail, Muhammad. Publisher: CRC Press LLC, Boca Raton, Fla.
 CODEN: 69GAK9; ISBN: 0-8493-2141-7

=> d 11-20 tiu

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L5 ANSWER 11 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 TI RNA interference: From gene silencing to gene-specific

therapeutics

- L5 ANSWER 12 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Evidence that RNA silencing-mediated resistance to Beet necrotic yellow vein virus is less effective in roots than in leaves
- L5 ANSWER 13 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Local infiltration of high- and low-molecular-weight RNA from silenced sunflower (*Helianthus annuus* L.) plants triggers post-transcriptional gene silencing in non-silenced plants
- L5 ANSWER 14 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Transient RNA silencing of scoulerine 9-O-methyltransferase expression by double stranded RNA in *Coptis japonica* protoplasts
- L5 ANSWER 15 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Increasing the carotenoid content of plants by inhibiting expression of the ϵ -cyclase gene by RNA interference
- L5 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Silencing expression of plant genes for DnaJ-like proteins to create transgenic plants with improved resistance to viral infection
- L5 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Modulation of gene expression in plants via siRNA and miRNA pathway
- L5 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Expression of siRNA driven by U6 or H1 promoter and uses in inhibiting tumor growth in breast tumor model
- L5 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Inhibition of gene expression by delivery of specially selected double stranded or other forms of small interfering RNA precursors enabling the formation of small interfering RNA in vivo and in vitro
- L5 ANSWER 20 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Altering flower color by altering levels of ketocarotenoids in petals by expression of a foreign ketolase gene

=> d 11 ab

- L5 ANSWER 11 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review. In the past 4 years, RNA interference (RNAi) has become widely used as an exptl. tool to analyze the function of mammalian genes, both in vitro and in vivo. By harnessing an evolutionary conserved endogenous biol. pathway, 1st identified in plants and lower organisms, double-stranded RNA (dsRNA) reagents are used to bind to and promote the degradation of target RNAs, resulting in knockdown of the expression of specific genes. RNAi can be induced in mammalian cells by the introduction of synthetic double-stranded small interfering RNAs (siRNAs) 21-23 base pairs (bp) in length or by plasmid and viral vector systems that express double-stranded short hairpin RNAs (shRNAs) that are subsequently processed to siRNAs by the cellular machinery. RNAi was widely used in mammalian cells to define the functional roles of individual genes, particularly in disease. In addition, siRNA and shRNA libraries were developed to allow the systematic anal. of genes required for disease processes such as cancer using high throughput RNAi screens. RNAi was used for the knockdown of gene expression in exptl. animals, with the development of shRNA systems that allow tissue-specific and inducible knockdown of genes promising to provide a quicker and

cheaper way to generate transgenic animals than conventional approaches. Finally, because of the ability of RNAi to silence disease-associated genes in tissue culture and animal models, the development of RNAi-based reagents for clin. applications is gathering pace, as technol. enhancements that improve siRNA stability and delivery in vivo, while minimizing off-target and nonspecific effects, are developed.

=> d 11 so

L5 ANSWER 11 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Pharmacology & Therapeutics (2005), 107(2), 222-239
CODEN: PHTHDT; ISSN: 0163-7258

=> d 13 ab

L5 ANSWER 13 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB Using grafting procedures, we have characterized post-transcriptional gene silencing (PTGS) in transgenic sunflower expressing β -glucuronidase (GUS) activity. Silencing was observed as early as 2 wk after grafting of non-silenced scions on to silenced rootstock. Transmission of the systemic signal occurs solely from stock to scion, is independent of the physiol. age of the rootstock and is not heritable. Furthermore, we report, for the first time in plants, an easy and low-cost method of activating RNA silencing by infiltration of purified RNA from silenced plants. Local application of total RNA derived from silenced sunflower plants to leaves of non-silenced plants induces PTGS in newly developed leaves above the point of infiltration, as shown by reduced GUS activity and mRNA levels. Silenced plants contain 21-23-nucleotide RNAs hybridizing to transgene target sequences, in contrast with leaves of non-silenced plants. However, de novo production of GUS-specific short RNA in non-silenced plants can be activated by leaf infiltration of low-mol.-weight RNAs isolated from leaves of silenced plants. Significant levels were detected as early as 2 wk after infiltration, peaked at 3 wk and declined 5 wk after infiltration. Our results provide evidence that RNA infiltration in sunflower induces transient silencing and is not transmitted to offspring. This approach could be of major use in dissecting the mechanisms involved in PTGS.

=> d 13 so

L5 ANSWER 13 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Plant Biotechnology Journal (2005), 3(1), 81-89
CODEN: PBJLAE; ISSN: 1467-7644

=> d 16 ab

L5 ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB The invention relates to plants and plant cells which have a transient or permanent virus resistance as a result of modulation of the gene expression and/or binding behavior of plant DnaJ-like proteins. The invention also relates to a method for the production of transgenic plants with increased virus resistance, wherein the expression of plant DnaJ-like proteins which interact with viral components is substantially prevented by silencing the expression of DnaJ-like protein genes. The invention further relates to a method for the production of transgenic

plants with increased virus resistance, wherein the interaction of viral components with plant DnaJ-like proteins is substantially prevented by expression of dominant-neg. mutants of the DnaJ-like proteins, by antibodies against DnaJ-like proteins, or by specific inhibitors. Thus, the cDNA and protein sequences of three DnaJ-like proteins from tobacco were identified. These proteins were named CPIP1, -2a, and -2b, for Capsid Protein-Interacting Protein, since they were shown to bind to the cap protein of potato virus Y by yeast two-hybrid assay. Transgenic tobacco plants in which CPIP1 gene expression was silenced with siRNA displayed a normal phenotype by a transient resistance to potato virus Y infection. Tobacco plants were also virus-resistant when they produced dominant-neg. mutants of CPIP1, i.e., CPIP1 proteins lacking a J region but still capable of binding the viral capsid protein.

=> d 16 pi

L5	ANSWER 16 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2004009821	A1	20040129	WO 2003-EP7945	20030721
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2491705	AA	20040129	CA 2003-2491705	20030721
	EP 1523561	A1	20050420	EP 2003-765074	20030721
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

=> d 17 ab

L5 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB Compns. and methods for modulating nucleotide sequence expression, particularly for modulating gene expression in plants, are provided. The compns. comprise precursor RNA constructs for the expression of an RNA precursor. The precursor RNA construct comprises a promoter that is expressed in a plant cell driving the expression of a precursor RNA having a microRNA. The miRNA is complementary or partially complementary to a portion of a target gene or nucleotide sequence and function to modulate expression of the target sequence or gene. In this manner, the RNA precursor construct can be designed to modulate expression of any nucleotide sequence of interest, either an endogenous plant gene or alternatively a transgene. The precursor RNA constructs may be used in combination with modulators to enhance the effect on gene expression. Expression of a modulator in the presence of the precursor RNA alters the accumulation of miRNAs and thus enhances the regulatory capabilities of miRNAs. The invention further comprises the use of a modulator to control gene expression via both siRNA and the miRNA pathway. Transformed plants, tissues, cells and seeds are also provided. The invention demonstrated that Hc-Pro (helper component-proteinase) differentially increased the accumulation of some miRNA in a tissue specific manner.

=> d 17 pi

L5 ANSWER 17 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009779	A2	20040129	WO 2003-US22718	20030721
WO 2004009779	A3	20040902		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
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CA 2492917	AA	20040129	CA 2003-2492917	20030721
US 2004268441	A1	20041230	US 2003-623930	20030721
EP 1551967	A2	20050713	EP 2003-765827	20030721
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

=> d 18 ab

L5 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB A kit is disclosed for gene functional studies which allows users to produce siRNA via siRNA expression cassettes, efficiently introduce the siRNA expression cassette into cultured mammalian cells, evaluate the transfection efficiency, and evaluate the siRNA synthetic efficiency. The kit includes a siRNA synthetic system, a transfection reagent(s), a PCR primer with a specific fluorescent dye tag for tracking down the siRNA delivery pathway and a reporter gene cassette such as GFP gene expression cassette, for easily selecting the cells that are successfully transfected with the siRNA in the whole cell pool. Human H1 and U6 genes (including the promoter region) were cloned and expression of siRNA was under control of the promoters. SiRNA targeting vascular endothelial growth factor (VEGF) gene was tested in mouse breast cancer model. When the siRNA cassette was injected into the pre-planted tumor, the tumor growth was significantly inhibited compared with gene carrier only control.

=> d 18 so

L5 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO

=> d 18 pi

L5 ANSWER 18 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004181821	A1	20040916	US 2004-789590	20040227
WO 2004083433	A1	20040930	WO 2004-US7037	20040308
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

=> d 19 ab

L5 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB The use of specially selected sequences from the target gene into designing double stranded or other forms of RNA (siRNA precursors or siRNAs) that enables small interfering RNA (siRNA) from this new invention is delivered for inhibition of cellular gene expression. Diseases may be prevented and treated by this process, e.g. severe acute respiratory syndrome (SARS) and human immunodeficiency virus (HIV) infections. The process may be practiced in vivo or in vitro. The small interfering RNA enabled is of sequences usually of 23 nucleotides or less. The invented method of sequence selection from the target gene, however, maybe applicable to double stranded RNA of any length.

=> d 19 so

L5 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

S0 Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW

=> d 19 pi

L5 ANSWER 19 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1482037	A1	20041201	EP 2004-253066	20040525
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
CA 2468118	AA	20041130	CA 2004-2468118	20040520
JP 2004357708	A2	20041224	JP 2004-160521	20040531

=> d 21-30 ti

L5 ANSWER 21 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2

TI The preferred route for the degradation of silencing target RNAs in transgenic plants depends on pre-established silencing conditions

L5 ANSWER 22 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 3

TI Redundancy of the two dicer genes in transgene-induced posttranscriptional gene silencing in Neurospora crassa

L5 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Use of RNAi technology to confer enhanced resistance to BmNPV on transgenic silkworms

L5 ANSWER 24 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Viral virulence protein suppresses RNA silencing-mediated defense but upregulates the role of microRNA in host gene expression

L5 ANSWER 25 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

- TI Probing the microRNA and small interfering RNA pathways with virus-encoded suppressors of RNA silencing.
- L5 ANSWER 26 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 4
- TI Viral RNA silencing suppressors inhibit the microRNA pathway at an intermediate step
- L5 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
- TI Small interfering RNA (siRNA) targeted to Smad3 inhibits transforming growth factor- β signaling
- L5 ANSWER 28 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Broad Spectrum Resistance to ssDNA Viruses Associated with Transgene-Induced Gene Silencing in Cassava
- L5 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Simple RNAi vectors for stable and transient suppression of gene function in rice
- L5 ANSWER 30 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Advances in study of RNA interference and its botanical significance

=> d 23 ab

- L5 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
- AB siRNA is a powerful tool for gene-specific silencing in plants and animals. In this study, we examined the use of gene silencing in generating transgenic silkworms resistant to the Bombyx mori nucleopolyhedrovirus (BmNPV). Using a transposon piggyBac system, we first generated BmN cells (rBmN-lef1), which carried artificial genes designed for expressing siRNAs with sequences of the essential viral gene lef-1. NPV DNA microarray anal. revealed that the accumulation of lef-1 mRNA was successfully inhibited in rBmN-lef1 infected with BmNPV. The virus titer in the culture medium of rBmN-lef1 at 48 h post-infection (h.p.i.) was 50% of that of the control cells. Moderate BmNPV-resistance caused by transgenesis of the artificial siRNA-expressing gene was confirmed in the transgenic silkworms. Virus production was reduced in transgenic silkworms relative to controls up to 96 h after viral inoculation. Although complete protection was not achieved and the transgenic larvae ultimately died, this is the first report to show the use of RNA interference in conferring enhanced viral resistance on transgenic animals.

=> d 23 so

- L5 ANSWER 23 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
- SO Archives of Virology (2004), 149(10), 1931-1940
CODEN: ARVIDF; ISSN: 0304-8608

=> d 27 ab

- L5 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
- AB RNA interference has become a powerful tool for silencing of gene expression in mammals and plants. To determine the effect of Smad3 on transforming growth factor- β signaling, we constructed a small interfering RNA (siRNA) targeted to Smad3. This siRNA inhibited expression of the endogenous Smad3 leading to the prevention of nuclear localization of Smad3. Further, Smad3 siRNA prevented not only anti-proliferative activity of TGF- β 1 but also TGF- β 1-inducible promoter activity.

=> d 27 so

L5 ANSWER 27 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 5
SO Biotechnology Letters (2004), 26(9), 699-703
CODEN: BILED3; ISSN: 0141-5492

=> d 29 ab

L5 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB Since the recent sequencing of the rice genome, the functional identification of rice genes has become increasingly important. Various tagged lines have been generated; however, the number of tagged genes available is not sufficient for extensive study of gene function. To help identify the functions of genes in rice, we developed a Gateway vector, pANDA, for RNA interference of rice genes. This vector can be used for Agrobacterium transformation of rice and allows easy and fast construction of efficient RNAi vectors. In the construct, hairpin RNA derived from a given gene is transcribed from a strong maize ubiquitin promoter, and an intron is placed 5' upstream of inverted repeats to enhance RNA expression. Anal. of rice genes using this vector showed that suppression of mRNA expression was observed in more than 90% of transgenic plants examined, and short interfering RNA indicative of RNA silencing was detected in each silenced plant. A similar vector, pANDA-mini, was also developed for direct transfer into leaf cells or protoplasts. This vector can be used for transient suppression of gene function in rice. These vectors should help identify the functions of rice genes whose tagged mutants are not available at present and complement existing methods for functional genomics of rice.

=> d 29 so

L5 ANSWER 29 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Plant and Cell Physiology (2004), 45(4), 490-495
CODEN: PCPHA5; ISSN: 0032-0781

=> d 30 ab

L5 ANSWER 30 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review. RNA interference (RNAi) is the sequence-specific gene silencing induced by double-stranded RNA. Small RNA including siRNA and microRNA plays a key role in RNA interference. The mechanisms of siRNA-induced RNAi and microRNA-induced RNA silencing are described resp. This paper also reviews the present status of study on RNAi in plants, which includes recent research progress of RNAi in transgenic plants and RNAi induced by plant virus. A remark on its botanical significance is also made including study of functional genomics, transgenic plants and disease resistance in plants.

=> d 30 so

L5 ANSWER 30 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Fenzi Zhiwu Yuzhong (2004), 2(3), 429-435
CODEN: FZYEA0; ISSN: 1672-416X

=> d 31-40 ti

- L5 ANSWER 31 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Cationic oligopeptide-mediated delivery of dsRNA for post-transcriptional gene silencing in plant cells
- L5 ANSWER 32 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Transgene silencing in Phalaenopsis expressing the coat protein of Cymbidium Mosaic Virus is a manifestation of RNA-mediated resistance
- L5 ANSWER 33 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI High frequency induction of RNA-mediated resistance against Cucumber mosaic virus using inverted repeat constructs
- L5 ANSWER 34 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Generation of transgenic potato plants highly resistant to potato virus Y (PVY) through RNA silencing
- L5 ANSWER 35 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI RNA silencing in plants by the expression of siRNA duplexes
- L5 ANSWER 36 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN
TI Viroid-induced RNA silencing of GFP-viroid fusion transgenes does not induce extensive spreading of methylation or transitive silencing.
- L5 ANSWER 37 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6
TI Post-transcriptional gene silencing induced by short interfering RNAs in cultured transgenic plant cells
- L5 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI RNA interference, arthropod-borne viruses, and mosquitoes
- L5 ANSWER 39 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Progress on the post-transcriptional gene silencing mechanism and correspondent strategy in transgenic plants
- L5 ANSWER 40 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
TI Sources of target specificity associated with the recovery against Pea seed-borne mosaic virus infection mediated by RNA silencing in pea.

=> d 35 ab

- L5 ANSWER 35 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB In animal cells, stable RNA silencing can be achieved by vector-based small interfering RNA (siRNA) expression system, in which Pol III RNA gene promoters are used to drive the expression of short hairpin RNA, however, this has not been demonstrated in plants. Whether Pol III RNA gene promoter is capable of driving siRNA expression in plants is unknown. Here, we report that RNA silencing was achieved in plants through stable expression of short hairpin RNA, which was driven by Pol III RNA gene promoters. Using glucuronidase (GUS) transformed tobacco as a model system, the results demonstrated that 21 nt RNA duplexes, targeting at different sites of GUS gene, were stably expressed under the control of either human H1 or Arabidopsis 7SL RNA gene promoter, and GUS gene was silenced in 80% of siRNA transgenics. The severity of

silencing was correlated with the abundance of siRNA expression but independent of the target sites and uridine residue structures in siRNA hairpin transcripts. Thus, the specific expression of siRNA provides a new system for the study of siRNA silencing pathways and functional genomics in plants. Moreover, the effectiveness of the human H1 promoter in a plant background suggested a conserved mechanism underlying Pol III complex functionality.

=> d 35 so

L5 ANSWER 35 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
S0 Nucleic Acids Research (2004), 32(21), e171/1-e171/7
CODEN: NARHAD; ISSN: 0305-1048

=> d 37 ab

L5 ANSWER 37 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6
AB Short interfering RNA (siRNA) is widely used for studying post-transcriptional gene silencing and holds great promise as a tool for both identifying function of novel genes and validating drug targets. Two siRNA fragments (siRNA-a and -b), which were designed against different specific areas of coding region of the same target green fluorescent protein (GFP) gene, were used to silence GFP expression in cultured gfp transgenic cells of rice (*Oryza sativa* L.; OS), cotton (*Gossypium hirsutum* L.; GH), Fraser fir [*Abies fraseri* (Pursh) Poir; AF], and Virginia pine (*Pinus virginiana* Mill.; PV). Differential gene silencing was observed in the bombarded transgenic cells between two siRNAs, and these results were consistent with the inactivation of GFP confirmed by laser scanning microscopy, Northern blot, and siRNA anal. in tested transgenic cell cultures. These data suggest that siRNA-mediated gene inactivation can be the siRNA specific in different plant species. These results indicate that siRNA is a highly specific tool for targeted gene knockdown and for establishing siRNA-mediated gene silencing, which could be a reliable approach for large-scale screening of gene function and drug target validation.

=> d 37 so

L5 ANSWER 37 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 6
S0 Genomics, Proteomics & Bioinformatics (2004), 2(2), 97-108
CODEN: GPBEEL; ISSN: 1672-0229

=> d 38 ab

L5 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review. RNA interference (RNAi) probably functions as an antiviral mechanism in most eukaryotic organisms. Variations in the activity of this antiviral pathway in mosquitoes could explain, in part, why some mosquitoes are competent vectors of medically important, arthropod-borne viruses (arboviruses) and others are not. There are three lines of evidence that show the RNAi pathway exists in *Aedes* species that transmit arboviruses. The first is that recombinant Sindbis viruses expressing an RNA fragment from a genetically unrelated dengue-2 virus (DENV-2) interfere with DENV-2 replication in *Aedes aegypti* mosquitoes by a mechanism similar to virus-induced gene silencing described in plants. The second is that transfection of C6/36 (*Aedes albopictus*) cells with either double-stranded RNA or synthetic small

interfering RNAs derived from an arbovirus genome interferes with replication of the homologous virus. The third is that a hairpin DENV-2-specific RNA transcribed from a plasmid can generate virus-resistant C6/36 cells. We hypothesize that genetically modified mosquitoes can be generated that transcribe a flavivirus-specific dsRNA, triggering the RNAi response soon after ingestion of a blood meal. This could induce the RNAi pathway in the midgut prior to establishment of virus infection and profoundly change vector competence. Towards this goal, we are developing transgenic *A. aegypti* lines that are refractory to DENV by exploiting the RNAi pathway.

=> d 38 so

L5 ANSWER 38 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
S0 Virus Research (2004), 102(1), 65-74
CODEN: VIREDF; ISSN: 0168-1702

=> d 39 ab

L5 ANSWER 39 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review. Post-transcriptional gene silencing (PTGS) is characterized by the phenomenon that the mRNA can be generated, but will be degraded instantly by a special system or inhibited in subsequent translation. It is often induced by some foreign gene, such as transgene, virus, transposon, or caused by some endo-special non-coded sequences. The degrading system involves the siRNA or miRNA, some enzyme and target mRNA, and the degrading orientation is 5'-3'. PTGS can spread to all the plant body through the signals. In this text, transgenic plant-PTGS scheme, which includes triggering, mRNA degrading or inhibition, and signal spreading, will be summarized; and the strategy for overcoming gene silencing is also concerned, focusing on some available DNA elements, such as gene silencing suppressor of virus, MAR, MOM, which can be used to devising of transgenic vector.

=> d 39 so

L5 ANSWER 39 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
S0 Zhongguo Shengwu Gongcheng Zazhi (2004), 24(6), 43-47
CODEN: ZSGZAW; ISSN: 1671-8135

=> d 41-50 ti

L5 ANSWER 41 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

TI The role of viroids in gene silencing: the model case of Peach latent mosaic viroid.

L5 ANSWER 42 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN

TI RNA silencing in plants by the expression of siRNA duplexes \h [electronic resource].

L5 ANSWER 43 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

TI RNA silencing in plants by the expression of siRNA duplexes.

L5 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 TI Methods and gene constructs for gene silencing using potato spindle tuber viroid (PSTVd) siRNAs in transgenic plants

L5 ANSWER 45 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 7
 TI Tomato mosaic virus replication protein suppresses virus-targeted posttranscriptional gene silencing

L5 ANSWER 46 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 8
 TI Evidence for nuclear processing of plant micro RNA and short interfering RNA precursors

L5 ANSWER 47 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 9
 TI Cucumber mosaic virus infection transiently breaks dsRNA-induced transgenic immunity to Potato virus Y in tobacco

L5 ANSWER 48 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 10
 TI Low temperature inhibits RNA silencing-mediated defence by the control of siRNA generation.

L5 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 TI Expression of siRNA from a pol III promoter in mammalian cells

L5 ANSWER 50 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 TI RNA interference and its role in the regulation of eucaryotic gene expression

=> d 44 ab

L5 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 AB Described are means and methods that generally enable the specific inactivation of genes. Transgenes comprising any gene sequence, cDNA sequence or a part of them are linked to cDNA subfragments having a size of >30 bp of a viroid, here preferably potato spindle tuber viroid (PSTVd). Insertion of such constructs into expression cassettes comprising regulatory elements allow expression of the transgenes upon introduction of the constructs into plant cells. Subsequent infection of the transformed plant or plant cells with the corresponding viroid, here preferably PSTVd, results in suppression of only the transgene expression and transcribed genes that share homol. with the transgene and/or the viroid sequence. Thus, the present method enables specific gene inactivation at any desired time. Examples of reporter gene inactivation are included that demonstrate the working order of the present invention.

=> d 44 so

L5 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 SO Eur. Pat. Appl., 30 pp.
 CODEN: EPXXDW

=> d 44 pi

L5 ANSWER 44 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1285966	A1	20030226	EP 2001-119348	20010810
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

=> d 49 ab

L5 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB BACKGROUND RNA interference (RNAi) refers to the sequence-specific silencing of gene expression induced by double-stranded RNA (dsRNA), and it has been demonstrated in various organisms, including plants, a nematode, *Drosophila*, and a protozoan. In mammalian cells, it has recently been reported that 21- or 22-nucleotide RNAs with 2-nucleotide 3' overhangs [small interfering RNA (siRNA)] induce RNAi without the induction of the dsRNA-dependent inhibition of protein synthesis, which is known as the host defense system against viral infections. However, the introduction of siRNA into cells by lipofection appears to restrict the range of applications because of low transfection efficiencies in some types of cell and/or short-term persistence of silencing effects. Here we report a vector-based siRNA system for the expression of siRNAs that has the potential to induce RNAi in mammalian cells. TECHNIQUES We introduced the promoter of a human gene for U6 small nuclear RNA (snRNA) for the transcription of both strands of siRNA in vivo. This expression system is suitable for the transcription of small RNAs. Moreover, remarkably high levels of transcripts were observed when both strands were transcribed in the same cell. Because RNAs transcribed from a U6 promoter include a stretch of approx. four uridines at the 3'-end, the transcribed siRNAs have an approx. 4-nucleotide overhang at each 3'-end, with the same activity as endogenous siRNAs with 2- or 3-nucleotide overhangs at the 3'-end. RESULTS To generate siRNAs in vivo, we designed an siRNA expression vector, in which the transcription of sense and antisense RNAs was driven independently by U6 promoters. Using a dual-luciferase reporter system, we demonstrated that this construct can efficiently suppress the expression of specific genes. Moreover, to demonstrate the power of the siRNA expression vector in suppressing the expression of endogenous genes, we constructed siRNA expression vectors targeted to transcripts of the gene for β -catenin, a protein involved in cadherin-mediated intercellular adhesion. The β -catenin-targeting siRNA was expressed from a plasmid that contained the origin of DNA replication of the Epstein-Barr virus (Ori-P), which is maintained stably and extrachromosomally in cells that express the Epstein-Barr virus nuclear antigen 1 (EBNA-1). Transformants with an siRNA expression plasmid targeted to β -catenin exhibited specific reduction in the expression of β -catenin. CONCLUSION We successfully engineered an siRNA expression vector with the ability to repress the expression of specific genes. Utilizing an EBNA-1/Ori-P system, we created transformants in which the expression of β -catenin was repressed. Thus, our siRNA expression system should be useful for "knockdown" by the RNAi of endogenous genes and has the potential to suppress gene expression through the generation of stable transformants. This tech. advance in the silencing of gene expression should not only facilitate a wide range of functional analyses of mammalian genes but also might allow therapeutic applications by means of vector-mediated RNAi.

=> d 498 so

65 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET SIZE
The answer numbers requested are not in the answer set.
ENTER ANSWER NUMBER OR RANGE (1):49

L5 ANSWER 49 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

SO Perspectives in Gene Expression (2003), 361-375, A35, 1 plate. Editor(s): Appasani, Krishnarao. Publisher: Eaton Publishing Co., Westborough, Mass. CODEN: 69FDMF; ISBN: 1-881299-16-3

=> d 50 ab

L5 ANSWER 50 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB A review. Several years ago it was discovered that **plant transformation** with a transcribed sense transgene could shut down the expression of a homologous endogenous gene. Moreover, it was shown that the introduction into the cell of dsRNA (double-stranded RNA) containing nucleotide sequence complementary to an mRNA sequence causes selective degradation of the latter and thus **silencing** of a specific gene. This phenomenon, called RNA interference (RNAi) was demonstrated to be present in almost all eukaryotic organisms. RNAi is also capable of **silencing** transposons in germ line cells and fighting RNA virus infection. Enzymes involved in this process exhibit high homol. across species. Some of these enzymes are involved in other cellular processes, for instance developmental timing, suggesting strong interconnections between RNAi and other metabolic pathways. RNAi is probably an ancient mechanism that evolved to protect eukaryotic cells against invasive forms of nucleic acids.

=> d 50 so

L5 ANSWER 50 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

S0 Acta Biochimica Polonica (2003), 50(1), 217-229
CODEN: ABPLAF; ISSN: 0001-527X

=> d 51-60 ti

L5 ANSWER 51 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Transient expression of homologous hairpin RNA causes interference with **plant** virus infection and is overcome by a virus encoded suppressor of gene **silencing**

L5 ANSWER 52 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 11

TI The capacity of **transgenic** tobacco to send a systemic RNA **silencing** signal depends on the nature of the inducing transgene locus.

L5 ANSWER 53 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI A simple and rapid method to detect **plant** siRNAs using nonradioactive probes

L5 ANSWER 54 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Expression of self-complementary hairpin RNA under the control of the rolC promoter confers systemic disease resistance to plum pox virus without preventing local infection

L5 ANSWER 55 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

TI Large-scale simultaneous methods for identifying genes that are upstream regulators of other genes of interest

L5 ANSWER 56 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 12

TI A viral suppressor of RNA **silencing** differentially regulates the accumulation of short interfering RNAs and micro-RNAs in tobacco.

- L5 ANSWER 57 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 TI RNA silencing of dengue virus type 2 replication in transformed C6/36 mosquito cells transcribing an inverted-repeat RNA derived from the virus genome
- L5 ANSWER 58 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 13
 TI High molecular weight RNAs and small interfering RNAs induce systemic posttranscriptional gene silencing in plants.
- L5 ANSWER 59 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
 TI Two classes of short interfering RNA in RNA silencing
- L5 ANSWER 60 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
 TI Induction of RNA interference in *Caenorhabditis elegans* by RNAs derived from plants exhibiting post-transcriptional gene silencing.

=> d 58 ab

- L5 ANSWER 58 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 13
 AB Posttranscriptional gene silencing (PTGS) in transgenic plants is an epigenetic form of RNA degradation related to PTGS and RNA interference (RNAi) in fungi and animals. Evidence suggests that transgene loci and RNA viruses can generate double-stranded RNAs similar in sequence to the transcribed region of target genes, which then undergo endonucleolytic cleavage to generate small interfering RNAs (siRNA) that promote degradation of cognate RNAs. The silent state in transgenic plants and in *Caenorhabditis elegans* can spread systemically, implying that mobile silencing signals exist. Neither the chemical nature of these signals nor their exact source in the PTGS pathway is known. Here, we use a positive marker system and real-time monitoring of green fluorescent protein expression to show that large sense, antisense, and double-stranded RNAs as well as double-stranded siRNAs delivered biolistically into plant cells trigger silencing capable of spreading locally and systemically. Systemically silenced leaves show greatly reduced levels of target RNA and accumulate siRNAs, confirming that RNA can induce systemic PTGS. The induced siRNAs represent parts of the target RNA that are outside of the region of homology with the triggering siRNA. Our results imply that siRNAs themselves or intermediates induced by siRNAs could comprise silencing signals and that these signals induce self-amplifying production of siRNAs.

=> d 58 so

- L5 ANSWER 58 OF 65 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2005) on STN DUPLICATE 13
 SO Proceedings of the National Academy of Sciences of the United States of America, Sept 3, 2002. Vol. 99, No. 18. p. 11981-11986
 Publisher: Washington, D.C. : National Academy of Sciences,
 CODEN: PNASA6; ISSN: 0027-8424

=> d 59 ab

L5 ANSWER 59 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

AB RNA silencing is a eukaryotic genome defense system that involves processing of double-stranded RNA (dsRNA) into 21-26 nt, short interfering RNA (siRNA). The siRNA mediates suppression of genes corresponding to the dsRNA through targeted RNA degradation. In some plant systems there are addnl. silencing processes, involving systemic spread of silencing and RNA-directed methylation/transcriptional suppression of homologous genomic DNA. The authors show here that siRNAs produced in plants from a green fluorescent protein (GFP) transgene are in short (21-22 nt) and long (24-26 nt) size classes, whereas those from endogenous retroelements are only in the long class. Viral suppressors of RNA silencing and mutations in Arabidopsis indicate that these classes of siRNA have different roles. The long siRNA is dispensable for sequence-specific mRNA degradation, but correlates with systemic silencing and methylation of homologous DNA. Conversely, the short siRNA class correlates with mRNA degradation but not with systemic signalling or methylation. These findings reveal an unexpected level of complexity in the RNA silencing pathway in plants that may also apply in animals.

=> d 59 so

L5 ANSWER 59 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN

SO EMBO Journal (2002), 21(17), 4671-4679.

CODEN: EMJODG; ISSN: 0261-4189

=> d 60 ab

L5 ANSWER 60 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

AB The term 'gene silencing' refers to transcriptional and post-transcriptional control of gene expression. Related processes are found across kingdoms in plants and animals. We intended to test whether particular RNA constituents of a silenced plant can induce silencing in an animal. We generated Nicotiana benthamiana lines that expressed green fluorescent protein (GFP) from a transgene. Plants in which GFP expression was spontaneously silenced showed siRNAs characteristic of post-transcriptional gene silencing (PTGS). RNA extracts prepared from silenced plants were injected into a GFP-expressing strain of Caenorhabditis elegans, where they induced RNA interference (RNAi). Extracts from non-silenced plants were inactive. This directly demonstrates a relationship and a mechanistic link between PTGS and RNAi. Controls confirmed that the silencing agent was an RNA. Size fractionation on denaturing gels revealed that an RNA of approx 85 nt was most active in inducing silencing in the worm. Northern blot analysis of the region in question did not detect a prominent GFP-specific RNA of sense or antisense polarity, indicating that the RNA species which induced silencing was present only in low concentration or did not hybridize due to formation of an intra-molecular double strand. In view of its high activity, it is possible that this agent is responsible for the systemic spread of silencing in plants and it might represent the aberrant RNA, a previously postulated inducer of silencing.

=> d 60 so

L5 ANSWER 60 OF 65 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on

STN

SO Nucleic Acids Research, (April 1, 2002) Vol. 30, No. 7, pp. 1688-1694.
print.
CODEN: NARHAD. ISSN: 0305-1048.

=> d 61-65 ti

L5 ANSWER 61 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI In the complex family of heat stress transcription factors, HsfA1 has a
unique role as master regulator of thermotolerance in tomato

L5 ANSWER 62 OF 65 AGRICOLA Compiled and distributed by the National
Agricultural Library of the Department of Agriculture of the United States
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(2005) on STN DUPLICATE 14
TI Generation of siRNAs by T-DNA sequences does not require active
transcription or homology to sequences in the plant.

L5 ANSWER 63 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Expression of small interfering RNAs targeted against HIV-1 rev
transcripts in human cells

L5 ANSWER 64 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI The long and short of siRNAs

L5 ANSWER 65 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Development and application of siRNA expression vector

=> d 61-65 ti

L5 ANSWER 61 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI In the complex family of heat stress transcription factors, HsfA1 has a
unique role as master regulator of thermotolerance in tomato

L5 ANSWER 62 OF 65 AGRICOLA Compiled and distributed by the National
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(2005) on STN DUPLICATE 14
TI Generation of siRNAs by T-DNA sequences does not require active
transcription or homology to sequences in the plant.

L5 ANSWER 63 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Expression of small interfering RNAs targeted against HIV-1 rev
transcripts in human cells

L5 ANSWER 64 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI The long and short of siRNAs

L5 ANSWER 65 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
TI Development and application of siRNA expression vector

=> d 63 ab

L5 ANSWER 63 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB RNA interference (RNAi) is the process of sequence-specific,
posttranscriptional gene silencing in animals and plants
initiated by double-stranded (ds) RNA that is homologous to the
silenced gene. This technol. has usually involved injection or
transfection of dsRNA in model nonvertebrate organisms. The longer dsRNAs
are processed into short (1925 nucleotides) small interfering RNAs
(siRNAs) by a ribonucleotide protein complex that includes an RNase III

related nuclease (Dicer), a helicase family member, and possibly a kinase and an RNA-dependent RNA polymerase (RdRP). In mammalian cells it is known that dsRNA 30 base pairs or longer can trigger interferon responses that are intrinsically sequence-nonspecific, thus limiting the application of RNAi as an exptl. and therapeutic agent. Duplexes of 21-nucleotide siRNAs with short 3' overhangs, however, can mediate RNAi in a sequence-specific manner in cultured mammalian cells. One limitation in the use of siRNA as a therapeutic reagent in vertebrate cells is that short, highly defined RNAs need to be delivered to target cells - a feat thus far only accomplished by the use of synthetic, duplex RNAs delivered exogenously to cells. In this report, the authors describe a mammalian Pol III promoter system capable of expressing functional double-stranded siRNAs following transfection into human cells. In the case of the 293 cells cotransfected with the HIV-1 pNL4-3 proviral DNA and the siRNA-producing constructs, the authors were able to achieve ≤ 4 logs of inhibition of expression from the HIV-1 DNA.

=> d 63 so

L5 ANSWER 63 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Nature Biotechnology (2002), 20(5), 500-505
CODEN: NABIF9; ISSN: 1087-0156

=> d 64 ab

L5 ANSWER 64 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review. A recent work identifies a distinct class of siRNAs derived from transgenes and endogenous retroelements in plants. This class has slower electrophoretic mobility than previously characterized siRNAs and may play an important role in transgene-induced systemic silencing and in methylation of endogenous retroelement DNA.

=> d 64 so

L5 ANSWER 64 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Molecular Cell (2002), 10(3), 435-437
CODEN: MOCEFL; ISSN: 1097-2765

=> d 65 ab

L5 ANSWER 65 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
AB RNA interference (RNAi) is a sequence-specific silencing phenomenon, which is induced by double-stranded RNA (dsRNA) and mediated through an evolutionarily conserved mechanism from plants to mammals. In mammalian cells, it has recently been reported that 21- or 22-nucleotide (nt) RNAs with 2-nt 3' overhangs (siRNA) induce RNAi without induction of the dsRNA-dependent inhibition of protein synthesis, known as the host defense system against viral infections. Moreover, we and other have developed siRNA expression systems utilizing a pol III promoter. Here we report a comparative anal. among various siRNA expression vectors and also demonstrate a regulatable RNAi in cells by using a tetracycline-controlled U6 promoter.

=> d 65 so

L5 ANSWER 65 OF 65 CAPLUS COPYRIGHT 2005 ACS on STN
SO Nucleic Acids Research Supplement (2002), 2 (Twenty-ninth Symposium on Nucleic Acids Chemistry), 113-114
CODEN: NARSCE

=> dis his

(FILE 'HOME' ENTERED AT 12:31:00 ON 15 OCT 2005)

FILE 'AGRICOLA, CAPLUS, BIOSIS' ENTERED AT 12:31:06 ON 15 OCT 2005

L1 6027 S SIRNA OR SHORT RNA MOLECULE
L2 2217 S L1 AND SILENC?
L3 302 S L2 AND (TRANSFORM? OR TRANSGENIC)
L4 85 S L3 AND PLANT?
L5 65 DUP REM L4 (20 DUPLICATES REMOVED)

=> s short antisense rna molecule? or short anti-sense rna molecule?

L6 1 SHORT ANTISENSE RNA MOLECULE? OR SHORT ANTI-SENSE RNA MOLECULE?

=> d ti

L6 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
TI Adeno-associated viral vectors for the delivery of antisense RNA.

=> d ab

L6 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AB The use of antisense RNA for the inhibition gene expression and viral pathogenesis appears promising for gene therapeutic use. We have designed a family of transducing viral vectors, based upon the noncytopathic adeno-associated virus (AAV), that encode antisense RNA targeting critical early events in the replicative cycle of targeted viruses, including human immunodeficiency virus-1 (HIV-1) and herpes simplex virus-1 (HSV-1). AAV vectors efficiently transduce cells of different types and integrate into chromosomal DNA in a stable fashion. Genes inserted into AAV vectors may be precisely designed to direct the transcription of short antisense RNA molecules since there is no transcriptional interference from the base vector. Cells expressing AAV-encoded antisense RNA show a significant reduction in the production of the cognate virus. Thus, AAV vectors may become powerful analytic and therapeutic tools for the stable introduction of transgenes including antisense genes into cells.

=> d so

L6 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
SO Methods (Orlando), (1993) Vol. 5, No. 1, pp. 51-59.
CODEN: MTHDE9. ISSN: 1046-2023.

=> d short sense rna molecule?

'SHORT' IS NOT A VALID FORMAT FOR FILE 'BIOSIS'
'SENSE' IS NOT A VALID FORMAT FOR FILE 'BIOSIS'
'RNA' IS NOT A VALID FORMAT FOR FILE 'BIOSIS'
'MOLECULE?' IS NOT A VALID FORMAT FOR FILE 'BIOSIS'

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 ENTER DISPLAY FORMAT (BIB):ti

L6 ANSWER 1 OF 1 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
 TI Adeno-associated viral vectors for the delivery of antisense RNA.

=> s short sense rna molecule?

L7 0 SHORT SENSE RNA MOLECULE?

=> s ((baulcombe d?) or (baulcombe, d?))/au

L8 464 ((BAULCOMBE D?) OR (BAULCOMBE, D?))/AU

=> s l8 and l2

L9 7 L8 AND L2

=> dup rem l9

PROCESSING COMPLETED FOR L9

L10 6 DUP REM L9 (1 DUPLICATE REMOVED)

=> d 1-6 ti

L10 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI Arabidopsis ARGONAUTE1 is an RNA slicer that selectively recruits microRNAs and short interfering RNAs

L10 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI An RNA-dependent RNA polymerase prevents meristem invasion by potato virus X and is required for the activity but not the production of a systemic silencing signal

L10 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI siRNA - the "dark matter" of genetics

L10 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

TI Crystal structure of p19 - A universal suppressor of RNA silencing

L10 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

TI RNA silencing in Arabidopsis.

L10 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
TI Two classes of short interfering RNA in RNA silencing

=> d 3 ab

L10 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN
AB A review discusses the underlying mechanism or the biol. significance of gene silencing by short interfering RNAs. Potential applications of RNA-silencing are the modification of plant growth and development and the induction of disease or pest resistance in crop plants. Moreover, virus-induced gene silencing can be used in high-throughput functional genomics to identify gene function. Inhibitors of the silencing pathway can be used to achieve high level transgene expression in plants.

=> d 3 so

L10 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN
SO Pflanzenschutz-Nachrichten Bayer (German Edition) (2005), 58(1), 21-33
CODEN: PNBAT; ISSN: 0340-1723

=> d 5 ab

L10 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN

=> d 5 so

L10 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
SO Biochemical Society Transactions, (August 2004) Vol. 32, No. Part 4, pp. 30A. print.
Meeting Info.: BioScience2004: From Molecules to Organisms. Glasgow, UK. July 18-22, 2004. The Biochemical Society.
CODEN: BCSTB5. ISSN: 0300-5127.

=> d 6 ab

L10 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
AB RNA silencing is a eukaryotic genome defense system that involves processing of double-stranded RNA (dsRNA) into 21-26 nt, short interfering RNA (siRNA). The siRNA mediates suppression of genes corresponding to the dsRNA through targeted RNA degradation. In some plant systems there are addnl. silencing processes, involving systemic spread of silencing and RNA-directed methylation/transcriptional suppression of homologous genomic DNA. The authors show here that siRNAs produced in plants from a green fluorescent protein (GFP) transgene are in short (21-22 nt) and long (24-26 nt) size classes, whereas those from endogenous retroelements are only in the long class. Viral suppressors of RNA silencing and mutations in Arabidopsis indicate that these classes of siRNA have different roles. The long siRNA is dispensable for sequence-specific mRNA degradation, but correlates with systemic silencing and methylation of homologous DNA. Conversely, the short siRNA class correlates with mRNA degradation but not with systemic signalling or methylation. These findings reveal an unexpected level of complexity in the RNA silencing pathway in plants that may also apply in animals.

=> d 6 so

L10 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
SO EMBO Journal (2002), 21(17), 4671-4679
CODEN: EMJODG; ISSN: 0261-4189

=> s ((hamilton a?) or (hamilton, a?))/au
L11 2051 ((HAMILTON A?) OR (HAMILTON, A?))/AU

=> s l11 and l2
L12 2 L11 AND L2

=> dup rem l12
PROCESSING COMPLETED FOR L12
L13 1 DUP REM L12 (1 DUPLICATE REMOVED)

=> d ti

L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 1
TI Two classes of short interfering RNA in RNA silencing